URBAN BIG DATA: STUDY OF URBAN AND ECONOMIC PHENOMENA BY MEANS OF GEOLOCALISED DATA FROM SOCIAL NETWORKS

DESCRIPTION OF THE TECHNOLOGY

Up to now, public administrations or any other type of entity that needs to know the characteristics of a certain urban phenomenon such as the supply and demand of economic activity, the presence of people in different urban spaces in a certain time slot, the opinion and preferences of citizens, are fundamentally faced with the following **problem**: official sources are not up to date because the field work necessary to obtain the data requires large investments of time and money. For this reason, decision making is usually not based on real citizen opinion, habits and preferences and, therefore, the probability of error in strategic decisions will be much higher.

In order to address this lack of information, the **Urban and Territorial Planning in the Coastal Space research group** has developed a web application that allows obtaining, downloading and filtering geolocalised data from social networks useful for identifying urban and economic phenomena. This application, called SMUA (Social Media Urban Analysis), collects data and specific metadata, which will become part of an ad-hoc database for subsequent analysis and visualisation through an application programming interface (API) (see Figure 1).

This technology focuses on those social networks that offer information on economic and urban activities in the city and, at the same time, their data is geolocalised, i.e. it allows the exact location of these activities to be known. Of all the social networks currently in existence, Google Places, Foursquare and Twitter are used as the basis for the analysis, complemented by other specific networks such as Instagram, Airbnb, Idealista, Strava and Wikiloc.

Therefore, all these social network data will allow:

- **Diagnosing urban problems**

  The data make it possible to identify the distribution of economic activities according to sectors (see Figure 2), the preferred urban spaces and/or the spatial-temporal presence of citizens in the city. All of this with the aim of implementing urban policies or actions.

- **Monitoring urban dynamics**

  The evolution of the above data over time makes it possible to understand urban and citizen behaviour in terms of specific actions or policies.

- **Establish intervention and urban regeneration strategies**

  Identify actions or interventions with greater potential for generating urban activity.

- **Facilitate public participation in urban processes**

  Identify citizens' opinions about the city in a non-invasive way.

Nowadays, Social Networks (RRSS) have become a constant source of geolocalised data from millions of citizens, fully updated data that can be used to increase knowledge about urban dynamics. Therefore, thanks to this web application, the decisions taken by companies or entities will be much more accurate as they will be based on the real and current behaviour of citizens.

MARKET APPLICATION SECTORS

The main sectors of application would be **public administrations**, especially at local level, **companies in the commercial, advertising or tourism sector**, or any other type of entity that needs to know in depth the behaviour of citizens or the current economic supply and demand in a specific urban space.

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TECHNICAL ADVANTAGES AND BUSINESS BENEFITS

- The data will be completely anonymous.
- This data provides geolocalised information: complete, accurate and up-to-date.
- The information is adapted to the needs of the entity or company.
- It allows agile, flexible and reliable decision-making.
- Allows monitoring of urban problems and/or policies.
- Optimisation of the information to save time and cost in the analysis.
- Creation of detailed reports.
- Adaptation of graphics for web environments.

This technology systematises the collection of specific data from a range of social networks, relying on filtering and analysis methods that generate a range of products that do not exist on the market.

CURRENT STATE OF DEVELOPMENT

The SMUA application has been up and running since 2016 and its results have already been validated in several projects around the world.

INTELLECTUAL PROPERTY RIGHTS

This technology is protected under the know-how of the research group, while the software has been developed and registered by the IT team that is part of the research group.

COLABORATION SOUGHT

The research group is looking for companies or public/private entities interested in using this innovative tool in their analysis and urban or economic projects that will facilitate their decision making.

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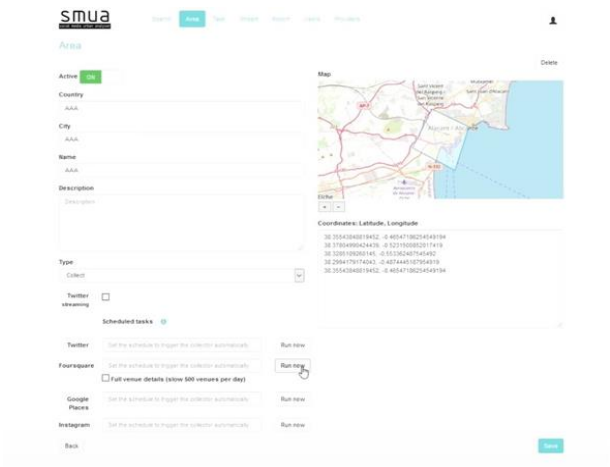
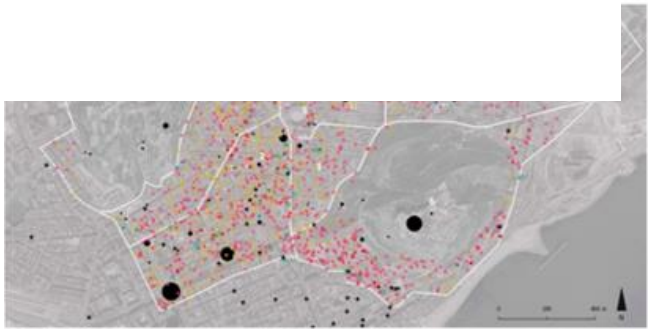


Figure 2: View of the offer of hotels and other tourist accommodation in the city of Alicante.



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